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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/453,319	12/02/1999	STEVEN M. SHEPARD	209529-81571	2455

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EXAMINER

VERBITSKY, GAIL KAPLAN

ART UNIT PAPER NUMBER

2859

DATE MAILED: 02/24/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/453,319

Applicant(s)

SHEPARD, STEVEN M.

Examiner

Gail Verbitsky

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 November 2004.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-28 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 15-17 is/are allowed.
- 6) ☒ Claim(s) 1-14 and 18-28 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Specification

1. The specification is objected to because, according to the specification, page 4, first paragraph (newly added description to Fig. 1B), "the application of the tensile forces does not exacerbate the defect" while, according to the originally filed specification, page 2, lines 16-19, 23-24, page 5, line 22, page 6, line 6, page 9, lines 11, 14, 23-24, the walls of the defect are shifted under stress. Clarification is required. See MPEP § 608.01(b).

Furthermore, upon further consideration, the Examiner considers the limitation stating "no migration of the subsurface kissing unbond" as a new matter since it is neither described in the originally filed specification or claims, nor clearly shown in the originally filed drawings.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 1, 18 and 24 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. In this case,

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Claims 1, 18: upon further consideration, the newly added limitation stating "no migration" of subsurface defect 100 toward the surface 102 has been considered to be a new matter because, A) this limitation has not been supported by the *originally filed* specification and drawings. Although, Fig. 1A shows that the subsurface defect inside the sample, it cannot not positively support the statement that it does not migrate toward the surface, B) also, as shown in Fig. 1B, there is some migration of the subsurface defect toward the surface, and the surface, as shown in Fig. 1B is deformed.

Claims 1 and 24: the originally filed specification does not describe that the applied force "is sufficient to exacerbate a thermal discontinuity caused by the subsurface kissing unbond defect", as stated in claims 1 and 24.

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 1-14, 18-23, 27-28 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In this case, the claim language is confusing due to the reasons stated above in paragraph 2.

Claims 2-14, 19-23, 25-28 are rejected by virtue of their dependency on claims 1, 18.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

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invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claim 24 is rejected under 35 U.S.C. 103(a) as being unpatentable over Thomas et al. (U.S. 6236049) [hereinafter Thomas] in view of Devitt et al. (U.S. 5111048) [hereinafter Devitt].

Thomas discloses a device/ method of non-destructively evaluating a specimen comprising exciting the specimen having a subsurface defect by an ultrasonic energy (col. 3, lines 1-2) and having an infrared camera for generating an infrared image to detect the presence of the subsurface (kissing) defect. Thomas states that the means providing the ultrasonic energy is capable to perform both functions, to heat the material and to provide the vibrational energy so as to make the defect visible (col. 6, lines 55-58).

Thomas does not explicitly teach to exacerbate the defect/ thermal discontinuities, as stated in claim 24.

Devitt teaches to apply stress to a specimen having a subsurface defect; the stress is capable to exacerbate the subsurface defect/ discontinuities (col. 7, lines 35-40).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to apply stress/ force to specimen/ material having a subsurface defect, disclosed by Thomas, so as to exacerbate the subsurface defect/ discontinuity, as taught by Devitt, in order to make the defect better visible to the operator, as already suggested by Devitt.

Allowable Subject Matter

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8. Claims 1-14, 18-23, 25-26 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112. Claims 15-17 are allowed.

Response to Arguments

9. Applicant's arguments filed on November 30, 2004 have been fully considered but they are not persuasive. Applicant states that there is a difference between exacerbation of the defect and exacerbation of the thermal discontinuity. Applicant states that in the present invention, the applied forces do not exacerbate the defect but exacerbate discontinuity. These arguments are not persuasive because, there is no statement in the originally filed specification supporting these arguments. Furthermore, according to the specification, page 2, lines 16-19, 23-24, page 5, line 22, page 6, line 6, page 9, lines 11, 14, 23-24, the force is applied onto the defect such that the walls of the defects are shifted, thus, exacerbating the defect. There is no indication of exacerbation of the thermal discontinuity shown in the specification. Applicant describes creating thermal discontinuity (page 2, line 18) but not exacerbating it. Perhaps Applicant should better define/ distinguish the subsurface defect vs. thermal discontinuity and describe how the forces are applied. Perhaps Applicant should show thermal discontinuities in the drawings. Furthermore, please note, no new matter should be added.

Also, according to the specification, page 4, first paragraph (newly added description to Fig. 1B), "the application of the tensile forces does not exacerbate the defect" while, according to the originally filed specification, page 2, lines 16-19, 23-24, page 5, line 22,

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page 6, line 6, page 9, lines 11, 14, 23-24, the walls of the defect are shifted under stress.

Furthermore, please note, that in the rejection on the merits, the Examiner considers that the thermal discontinuity is a diminished continuity/ lack of continuity /lack of thermal conduction shown in the thermal images, and if that the application of stress impacts the subsurface kissing defect, it, inherently, impacts thermal continuity/ thermal conduction through the defect.

Conclusion

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The prior art cited in the PTO-892 and not mentioned above disclose related devices and methods.

NN82102633 discloses a device in the field of applicant's endeavor. According to Fig. 1, the subsurface defect 24 does not migrate to ward the surface.

SU1081510A discloses a device in the field of applicant's endeavor. According to Fig. 1, the subsurface defect 2 does not migrate to ward the surface.

Any inquiry concerning this communication should be directed to the Examiner Verbitsky who can be reached at (571) 272-2253 Monday through Friday 8:00 to 4:00 ET.

GKV

Gail Verbitsky

Primary Patent Examiner, TC 2800



February 07, 2004